

# Tropical Cyclone *Quick Reference Guide*

U.S. Navy Atlantic Tropical Web Site: <https://www.nlmoc.navy.mil>

Maritime Operations Watch Floor: 757.444.7750

DSN 564.7750 Naval Meteorology & Oceanography Center - Norfolk, 9141 Third Ave, Norfolk VA 23511-2394 email: [cdo@nlmoc.navy.mil](mailto:cdo@nlmoc.navy.mil)



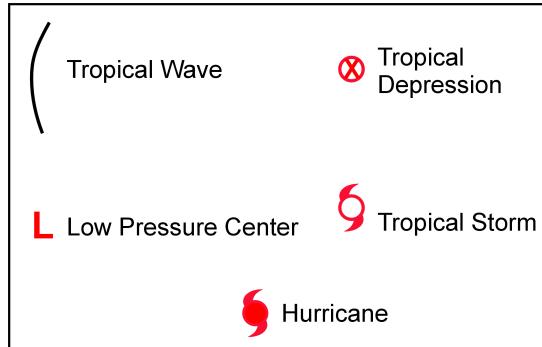
**Atlantic** Tropical Cyclone Season: 01 June - 30 November **East Pacific** Tropical Cyclone Season: 15 May - 30 November

## 2005 Atlantic Tropical Cyclone Names

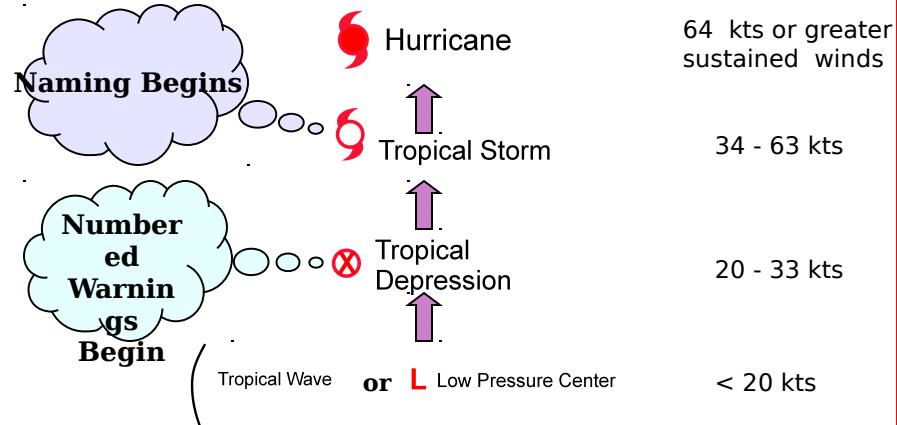
Arlene  
Bret  
Cindy  
Dennis  
Emily  
Franklin  
Gert  
**Harvey**  
Irene  
Jose  
Katrina

Lee  
Maria  
Nate  
Ophelia  
Philippe  
Rita  
Stan  
Tammy  
Vince  
Wilma

## Tropical Cyclone Symbols



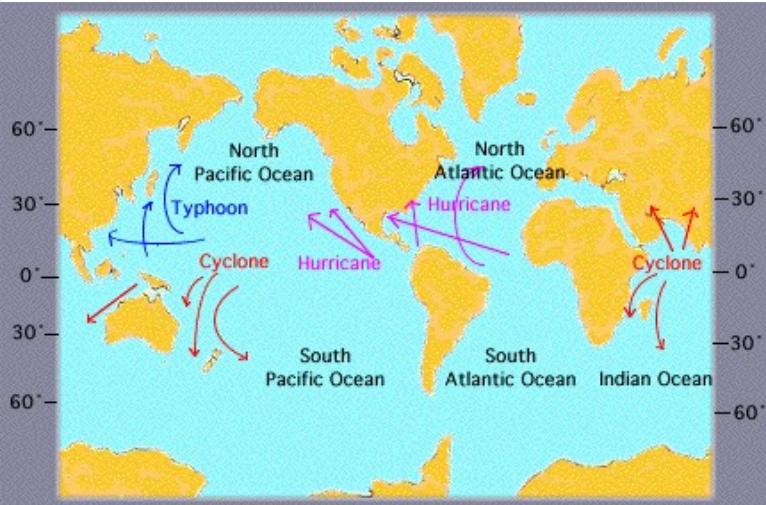
## Stages of Tropical Cyclone Development



## Saffir-Simpson Scale - Hurricane Destruction Potential

Category	Sustained Wind Speed (knots)	Sustained Wind Speed (mph)	Storm Surge (ft)	Damage
1	64 - 82	74 - 95	4 - 5	Minimal
2	83 - 95	96 - 110	6 - 8	Moderate
3	96 - 113	111 - 130	9 - 12	Extensive
4	114 - 135	131 - 155	13 - 18	Extreme
5	> 135	> 155	> 18	Catastrophic

## Tropical Cyclones: Development Areas and Movement



NOTE: Category 3, 4, & 5 are considered **MAJOR** hurricanes



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Tropical Cyclone Conditions of Readiness (COR) (time to onset of destructive winds*)		Sortie Conditions	Aircraft Evacuation Status Reports (required at the following times)
<b>COR V</b>	96 hours		72 hours
<b>COR IV</b>	72 hours		48 hours
<b>COR III</b>	48 hours		24 hours
<b>COR II</b>	24 hours		12 hours
<b>COR I</b>	12 hours		

\*Destructive winds are defined for each base. **Hampton Roads** defines destructive winds as **50 kts or greater**

## Environmental Requirements for Tropical Cyclone Development

- **Sea Surface Temperature**  $> 26$  C/78 F with sufficient depth (approx 200ft) or warm water
- **Pre-existing disturbance** to trigger thunderstorm activity (frontal boundary, easterly wave, distal low pressure, etc...)
- **Divergence** at the Upper Levels (above the 400 mb level)
- Ample Planetary Vorticity (**Coriolis Force**) [disturbance located above 8 degrees North Latitude or below 8 degrees South Latitude)
- **Weak (< 20kts) vertical wind shear** between the surface and upper troposphere
- Relatively **moist layers at the mid-levels (approx 700-1000 mb)**

## KEY TO TROPICAL CYCLONE WARNING GRAPHICS

The blue dashed line on the graphic indicates the **Ship Avoidance Area** associated with a storm. While the hurricane track connecting the forecast points is a useful tool, it is important to remember the uncertainty associated with a tropical cyclone track. The Ship Avoidance Area gives a projection of potential storm progress from the warning valid time for the next 24

The **black and red lines** found on projected tropical cyclone track indicate the **34 knot, 50 knot, and 64**

**knot wind radii** associated with the storm at a given point. The outermost black line indicates the 34 knot radius, the red line indicates the 50 knot radius, and the inner black line shows the 64 knot radius. Since not all cyclones have the highest winds associated with them, weaker storms will not have a 64-knot radius (and possibly no 50-knot radius also.) The actual number of miles for the radius in each quadrant is listed in the associated Tropical Cyclone

